DOCUMENT RESUME

ED 384 165 EC 304 001

AUTHOR Mootilal, Anju; Musselman, Carol
TITLE The Social Adjustment of Deaf Adolescents in Segregated, Partially-Integrated and Mainstreamed Settings.
PUB DATE Apr 94
NOTE 21p.; Paper presented at the Annual Meeting of the American Educational Research Association (New Orleans, LA, April 4-8, 1994).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Research/Technical (143)

EDRS PRICE MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS Adolescents; Comparative Analysis; *Deafness; Emotional Adjustment; Foreign Countries; Interpersonal Competence; *Mainstreaming; *Peer Relationship; Secondary Education; *Social Adjustment; *Special Classes; *Student Adjustment; Student Behavior; Student Participation

ABSTRACT

This study examined the social adjustment of adolescents who were deaf and enrolled in segregated (n=39), partially integrated (n=15), and mainstreamed (n=17) settings, comparing them with a control group of students without hearing impairments (n=56). These students in grades 8 to 13 in Ontario, Canada, were administered the Social Activity Questionnaire and were assessed on in-class participation, social participation, social adjustment, and emotional security. Overall, segregated and partially integrated students reported better adjustment with peers who were deaf than with peers who had normal hearing. Mainstreamed students tended to have better adjustment with students with normal hearing, although differences were not significant. Partially integrated students were the best adjusted overall, with no clear differences among segregated, mainstreamed, and students with normal hearing. There were no significant differences among groups in perceived social competence. The implications of these findings for a bilingual/bicultural view of deafness are discussed. (Contains 32 references and 5 figures.) (SW)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

ED 384 165

The Social Adjustment of Deaf Adolescents in Segregated, Partially-Integrated and Mainstreamed Settings

Anju Mootilal and Carol Musselman, Ph.D.

The Ontario Institute for Studies in Education

Department of Applied Psychology

252 Bloor Street West

Toronto, Ontario CANADA

M5S 1V6

Paper prepared for the Annual Convention of the American Educational Research Association, April 4 - 8, 1994, New Orleans, LA. PLEASE DO NOT QUOTE WITHOUT PERMISSION.

"PERMISSION TO REPRODUCE THIS MATERIAL IN OTHER THAN PAPER COPY HAS BEEN GRANTED BY

Carol Musselman

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)"

EC 304001

BEST COPY AVAILABLE

ABSTRACT

This study examined the social adjustment of deaf adolescents enrolled in segregated (n = 39), partially-integrated (n = 15) and mainstreamed (n = 17) settings, comparing them with a control group of hearing students (n = 52). Overall, segregated and partially-integrated students reported better adjustment with deaf than with hearing peers; mainstreamed students tended to have better adjustment with hearing-peers, although the differences were not significant. Partially-integrated students were the best adjusted overall, with no clear differences among segregated, mainstreamed, and hearing students. The implications of these findings for a bilingual/bicultural view of deafness are discussed.

INTRODUCTION

Researchers have reported an increased incidence of behavioral and psychological disorders among deaf students. Estimates in the literature reviewed by Greenberg and Kusche (1989) ranged from 8 to 30%. Research on the mental health of deaf persons has been criticized, however, for failure to take their communication difficulties and unique socio-linguistic environment into account (e.g. Lane, 1988; Moores, 1987). Indeed, there is considerable evidence that the adjustment of deaf individuals is related to their communicative competence (Musselman, MacKay-Soroka, Trehub, & Simon-Eagle, in press; Weisel & Bar-Lev, 1992; Greenberg & Kusche, 1989; Greenberg, 1980; Schlesinger & Meadow, 1972).

Additional information derives from research on the relationship between educational setting and social adjustment. Most studies have shown that deaf students in the mainstream are socially isolated, feel lonely, have lower self esteem and are less well adjusted than those in segregated settings (Charlson et al, 1992; Schaffer-Meyer, 1990; Foster, 1988; Antia, 1982; Farrigua & Austin, 1980; Reich et al, 1977; Kennedy et al, 1976). Not all studies have found these negative effects, however, and there is evidence that special programs can improve relationships between deaf and hearing students (Davis, 1986; Ladd, Munson & Miller, 1984).

In their integrative review of this work, Leigh and Stinson (1991) reported on several studies which related communication proficiency to social adjustment. These studies show that oral skill is related to social adjustment in the mainstream, and sign proficiency to adjustment in segregated settings.

Leigh and Stinson's paper summarized two studies conducted by Stinson and his colleagues, both using large samples of hearing-impaired adolescents, one from the U.S. (Stinson, Chase & Kluwin, 1990) and the second from England (Stinson & Chase, 1990). Using the Social Adjustment Scale, these studies investigated three components of social adjustment: participation, social relatedness (both of which were investigated with respect to both deaf and hearing reference groups) and perceived social competence. The results from these studies suggest that deaf adolescents' social adjustment varies with degree of mainstreaming, reference group and age. Overall, hearing-impaired students participated more with other hearing-impaired students than with hearing students. Among students in grades 10 and 11, mainstreaming was associated with increased interaction with hearing students, so that those most frequently mainstreamed interacted more with hearing than with hearing-impaired students. For

grade 12 students, however, those most frequently mainstreamed continued to interact more with deaf than with hearing students, and their overall participation level declined. Relational bonds were generally higher toward other deaf than toward hearing peers, especially among older students. The U.S. study found that older students with more mainstreaming experience had poorer perceived social competence, and the English study found a general decrease in perceived social competence with increased mainstreaming. It thus appears that exposure may enhance deaf students ability to interact with hearing peers, but identity remains more strongly involved with deaf peers. The deaf peer group also appears to assume increasing importance as students mature. These findings are not surprising given the importance of communication in establishing satisfying relationships, and are consistent with a cultural view of deafness (c.f., Carver & Doe, 1990; Padden & Humphreys, 1988).

The present study is a replication and a further extension of the work by Stinson and his colleagues. Their sample included both hard of hearing and deaf students, and consisted of four groups with varying degrees of mainstreaming experience. The present sample included only students with hearing threshold levels in the severe and profound range (i.e. 70 dB and greater). The sample was divided into students with segregated, partially-integrated, and mainstreamed placements, and included a comparison group of hearing students.

METHOD

Participants

Deaf participants. The study included 72 deaf adolescents enrolled in a variety of settings across Ontario, including segregated classes, public schools, provincial schools and mainstream programs. This group was drawn from the early childhood sample studied by Musselman, Lindsay, and Wilson (1988), a sample which was highly representative of the population of deaf children. The adolescent sample consisted of all those from that sample who could be located and who agreed to participate. Students ranged in age from 12.9 to 18.6 years ($\bar{x}$ = 16.3), and grades 8 to 13 ($\bar{x}$ = 10).[1] Hearing threshold level ranged from 70 to 120 dB ($\bar{x}$ = 98 dB). Due to the greater reluctance of males to participate, the sample was not equally representative of males and females: only 36 % of participants were male and 64 % female. On other important background characteristics (i.e., hearing loss,

[1]The Ontario school system has 13 grades rather than 12.

performance IQ, age, socioeconomic status), the adolescent group did not differ significantly from the early childhood group. Thus, except for sex, the sample is broadly representative of the population of deaf adolescents.

Using self report data, deaf students were grouped according to educational setting as follows: Segregated (SEG) - 0 classes with hearing students, n = 39; Partially Integrated (PI) - 1 to 4 classes with hearing students, n = 15; Mainstreamed (MN) - 5 or more classes with hearing students, n = 17.

Hearing Participants. A hearing sample (H) was included for comparison purposes. The hearing group included 56 students who were enrolled in regular English classes at a tehnical high school in Toronto. Students ranged in age from 15 to 19 ($\bar{x}$ = 15.4) and grades 10 to 12 ($\bar{x}$ = 11). Seventy percent of the sample were males and thirty percent were females.

Deaf and hearing participants differed in several ways, including sex, socioeconomic status, and ethnicity. Deaf participants were predominantly female, while more hearing participants were male. Deaf participants were predominately Canadian-born (74%), while the hearing sample reflected the ethnic diversity of a downtown Toronto technical school (33% Canadian-born). Deaf participants were predominately middle class, while the hearing sample consisted of an even distribution of low and middle SES. Thus the hearing group provides only a rough anchor against which to compare data from the deaf groups.

Social Activity Questionnaire

The Social Activity Questionnaire (SAQ) represents an adaptation of the Social Activity Scale (SAS) developed by Stinson and his colleagues (Leigh & Stinson, 1991). The SAS measures deaf adolescents' social adjustment on three dimensions: Participation, Relatedness, and Perceived Social Competence.

Participation is defined as the frequency of interaction with peers, and includes three subscales: in class; at school; and social (i.e. outside of school). Relatedness concerns the perceived security of relationships with others, and includes two subscales: desire for closer relationships with peers and emotional security. Each of Participation and Relatedness scales has two versions, one oriented toward deaf peers and the second toward hearing peers. The third dimension, Perceived Social Competence, refers to a general sense of one's ability to establish good peer relationships, and exists in only one version.

For purposes of economy, the in-school social activity scale was not included, since the questions overlapped with items on the other two participation scales. The questionnaire used in this study (SAQ), therefore, consisted of four scales, each with deaf-oriented and hearing-oriented versions (in-class participation, social activities, closer relationships, emotional security) plus the perceived social competence scale. After pilot testing, changes were made to simplify the wording of some items, and the five-point Likert scales used in the SAS were replaced by a single, three-point scale.

Procedure

Participants were administered appropriate sections of the SAQ according to setting. All deaf students completed the social, closer relationships, and emotional security scales in both deaf- and hearing-oriented versions. SEG students completed the in-class participation scale in the deaf-oriented version, MN students completed this scale in the hearing-oriented version, and PI students completed both versions. Hearing (H) students completed only the hearing-oriented version of each scale. All groups completed the perceived social competence scale.

The SAQ was administered to groups of four or fewer students as part of the larger study. Each of the students received one copy of the questionnaire and a pencil. Students were informed that the questionnaire did not have any bearing on their scholastic record and would not be graded. Instructions on how to complete the questionnaire were presented in the student's preferred mode of communication (i.e., ASL, TC, or spoken English) by a research officer. Students completed sample items before beginning the questionnaire and were encouraged to ask questions about any items they didn't understand during administration. Administration generally required 20 - 30 minutes.

RESULTS

Reliability

Alpha coefficients were computed for each of the scales. These varied from .65 to .92, with a mean of .78 for deaf and .90 for hearing participants. Thus the modified SAQ was a reliable instrument for both groups.

Differences by Setting and Reference Group

In-class participation. Partially-integrated students (PI) completed both versions of the in-class participation scale. Figure 1 shows that PI students scored higher on the deaf-oriented than the hearing-oriented version. A Student's *t* test comparing these scores showed that the difference was significant ($t = -4.25$, $p = .001$).

Inspection of Figure 1 suggests that PI students in deaf classes had the highest participation, with no differences among the other groups. A one-way analysis of variance was used to compare the in-class participation scores of all four groups, using the deaf-oriented scores of the PI group. The analysis revealed a significant main effect for setting [$F(3,121) = 3.32$, $p = .022$). Orthogonal contrasts showed that the three deaf groups scored higher than the hearing group [$t(1,121) = -1.95$, $p = .054$]; the PI group scored higher than the other two deaf groups combined [$t(1,121) = 2.71$, $p = .008$], higher than the SEG group [$t(1,121) = 2.83$, $p = .005$], higher than the MN group [$t(1,121) = 2.13$, $p = .036$], and higher than the H group [$t(1,121) = 3.06$, $p = .003$). Thus PI students in a deaf setting had the highest in-class participation, with no differences among the other groups.

Social Participation. The three deaf groups (SEG, PI, MN) completed both deaf- and hearing-oriented versions of the social participation scales. Figure 2 suggests that the highest participation was shown by PI students toward deaf peers. It also suggests that SEG and PI students had better social adjustment with deaf peers and MN students with hearing peers. The significance of these differences was assessed using a 3 (Setting) x 2 (Reference group) analysis of variance. There was a main effect for setting [$F(2,65) = 3.45$, $p = .038$]; orthogonal contrasts showed that the PI group scored higher overall than the MN group [$t = 6.38$, $p = .014$], but did not differ from the SEG group. There was a significant main effect for reference group [$F(1,65) = 3.93$, $p = .052$] and a significant setting x reference group interaction [$F(2,65) = 4.99$, $p = .010$]. Orthogonal contrasts showed a significant difference between the SEG and MN groups, but no difference between the PI and MN groups. Simple *t* tests confirmed that SEG students scored significantly higher on the deaf- than the hearing-oriented scale ($t = -4.90$, $p = .000$), while differences for the PI and MN groups did not attain significance.

A one-way analysis of variance comparing the best scores of the deaf groups (i.e. the deaf-oriented scores for the SEG and PI students and hearing-oriented scores of the MN students) with the scores of the H group revealed no significant differences.

Thus Deaf and hearing students did not differ in social participation overall, although PI students had higher scores than the other deaf groups. SEG students were better adjusted with deaf- than with hearing peers, with no differences for PI and MN students.

Desire for closer relationships. Inspection of Figure 3 suggests that the highest closer relationship scores were attained by SEG students toward deaf peers. A two-way analysis of variance of the three deaf groups revealed a main effect for setting [$F(2,64) = 6.97$, $p = .002$]; the orthogonal contrast showed SEG students scored higher overall than MN students [$F(1,64) = 13.73$, $p = .000$], with no difference between PI and MN students. There was a signifant interaction between setting and reference group [$F(2,64) = 4.33$, $p = .017$], with a significant contrast between SEG and MN students; the contrast between the PI and MN students was not significant. Simple t tests showed a significant difference between reference groups for SEG students ($t = 3.38$, $p = .002$), but not for PI and MN students.

A one-way analysis of variance of the best scores of all four groups revealed a significant main effect [$F3,123) = 19.41$, $p = .000$). Orthogonal contrasts showed that the three deaf groups scored higher than the hearing group [$t(1,123) = 5.80$, $p = .000$], the deaf-oriented scores of SEG students were higher than the hearing-oriented scores of MN students [$t(1,123) = 3.27$, $p = .001$), and the deaf-oriented scores of PI students were higher than the scores of H students [$t(1,123) = 3.73$, $p = .000$).

Thus analysis of the desire for closer relationships revealed that deaf students scored higher than hearing students, with the highest scores shown by SEG students toward deaf peers.

Emotional security. Figure 4 suggests that SEG and PI students had better emotional security with deaf than with hearing peers, with the highest overall scores obtained by PI students toward deaf peers and the lowest scores obtained by SEG students toward hearing peers; the scores of MN students did not appear to differ by reference group, and were similar to those of hearing students. Analysis of variance using the three deaf groups revealed a a significant main effect for setting [$F(2,67) = 3.79$, $p = .028$], with SEG students scoring lower overall than MN students [$F(1,67) = 4.36$, $p = .041$). There was a significant main effect for reference group [$F(1,67) = 11.30$, $p = .001$) and a significant setting x reference group interaction [$F(2,67) = 3.22$, $p = .046$); orthogonal contrasts revealed a significant difference between the SEG and MN groups [$F1,67) = 4.18$, $p = .045$). Student's

_t_ tests showed that the difference between deaf- and hearing-oriented scores for the SEG group was significant ($t = 3.57$, $p = .001$), but not for the MN group. The orthogonal contrast between the PI and MN groups was not significant, although the simple comparison of deaf- and hearing-oriented scores for the PI group was significant ($t = 2.93$, $p = .011$).

One-way analysis of the best scores for all four groups showed a significant difference [$F(3,123) = 2.62$, $p = .054$]. Orthogonal contrasts show that the PI group in a deaf setting had better social adjustment than the SEG group in the deaf setting [$t(1,123) = 2.46$, $p = .015$], the MN group in the hearing setting [$t(1,123) = 2.07$, $p = .041$] and the H group [$t(1,123) = 2.73$, $p = .007$].

Thus the PI group had the highest level of emotional security overall, with no difference in adjustment toward deaf and hearing peers. MN students also showed no difference in adjustment toward deaf and hearing peers, and had higher adjustment overall than SEG students, which was due to the lower adjustment shown by SEG students toward hearing peers.

Perceived Social Competence. Figure 5 shows a tendency for the PI group to have higher perceived social competence scores, followed by the H, the SEG and then the MN group. One-way analysis of variance, however, revealed that these differences were not significant.

DISCUSSION

This study compared the social adjustment of deaf students in three educational settings -- segregated, partially-integrated, and mainstreamed -- with that of hearing students. The social adjustment of deaf students was assessed with respect to both deaf and hearing reference groups, using the Social Activity Questionnaire (SAQ). This scale, which is a modification of the Social Activity Scale (SAS) developed by Stinson and his colleagues (Leigh & Stinson, 1991), consisted of four scales with both deaf- and hearing-oriented versions -- in-class participation, social participation, desire for closer relationships, emotional security -- plus a perceived social competence scale.

Comparisons among the four groups showed that partially-integrated students had the highest overall scores on in-class participation and social participation, tying with mainstreamed students on emotional security. Partially-

integrated and mainstreamed students also did not differ on desire for closer relationships, although segregated students had the highest overall scores. Segregated ~~segregated~~ students had the lowest scores on emotional security, with no difference between partially-integrated and mainstreamed students. There were no differences among groups on perceived social competence. Thus, overall, partially-integrated students appeared to have the highest adjustment, with no clear differences between segregated and mainstreamed students.

Comparisons showed that levels of adjustment varied by reference group and setting. Segregated students consistently reported better adjustment with deaf than with hearing peers. Partially-integrated students, with exposure to both settings, also tended to report better adjustment with deaf than with hearing peers, although the differences were only significant for in-class participation and emotional security. These findings are consistent with previous studies showing poorer social adjustment between deaf and hearing persons than between persons who have the same hearing status (Antia, 1982; Arnold & Tremblay, 1979; Brackett & Henniges, 1976). Mainstreamed students, conversely, tended to report better adjustment toward hearing peers, although none of these differences were significant. Thus, hearing status need not always be a factor in social adjustment.

These findings suggst that orientation toward deaf peers is stronger than toward hearing peers: given exposure to both groups (partial-integration), deaf students were better adjusted with deaf peers; greater exposure to hearing peers, however, did not significantly shift the balance for mainstreamed students in favor of hearing peers. In order to participate and develop strong relationships with deaf peers, mainstreamed students must seek interaction outside of school time. That they do so is evidence of the importance of these relationships to even this highly select group of mainstreamed students.

Summarizing the two studies by Stinson and his colleagues (Stinson, Chase & Kluwin, 1990; Stinson & Chase, 1990), Leigh and Stinson (1991) reported that participation with hearing peers increased as a function of mainstreaming, but relational bonds did not increase. In the present study, both participation and relationship bonds increased. The Stinson data also revealed that partially-integrated students had higher scores on some scales than mainstreamed students, a finding which was replicated here.

In interpreting these results, it is important to remember that current educational practice tends to mainstream higher-functioning and segregate lower-functioning students. Thus, it is surprising to find partially-

integrated students scoring higher than mainstreamed students. The lower scores of the segregated students are consistent with this sample bias.

The more favorable outcomes associated with mainstreaming in the present study compared to the two Stinson studies may also reflect sample differences. The partially-integrated and mainstreamed groups in the present study were small compared to the segregated group, reflecting their highly selective character. The differing results may reflect differences in placement practices in the educational jurisdications from which the various samples came, or recent improvements in support services available to deaf students in the mainstream.

Comparisons showed that deaf students scored as well as or better than hearing students. This may reflect a bias in the hearing sample, which was drawn from an inner-city, technical high school, and was predominantly male. The advantage experienced by deaf students on in-class participation further reflects the small size of segregated classes, with their enhanced opportunities for interaction (Davis, 1986). Nevertheless, these findings show that deaf students are not necessarily more poorly adjusted than hearing students (cf. Lederberg et al, 1986, 1987). It is especially interesting that there were no differences between the mainstreamed deaf students and hearing students.

Overall, the best social adjustment among the deaf groups was shown by partially-integrated students toward deaf peers: this was true for in-class participation, social participation, and emotional security. The sole difference occured on desire for closer relationships, where segregated students reporting on adjustment toward other deaf peers had the highest scores. The meaning of this scale is somewhat ambiguous and might be interpreted as reflecting, not adjustment per se, but social investment. Segregated students not only preferred deaf peers but, by nature of their placement, are more restricted to that social group. Partially-integrated students have opportunities to interact with both deaf and hearing peers, and mainstreamed students evidently seek out deaf peers outside of school. Thus partially-integrated and mainstreamed students have less investment in either peer group. Hearing students scored significantly lower on this scale than any of the deaf groups, which could indicate a higher level of satisfaction with existing relationships.

It is important to note that there were no significant differences among groups in perceived social competence. Thus, inspite of relating differently to deaf and hearing peers, all students expressed a similar overall sense of themselves overall as social beings. Thus there are different paths to satisfying social relationships.

The mainstreamed students in this study fared reasonably well, although sometimes scoring lower than the other deaf groups. Thus mainstreaming appeared to be a viable option for the students in this study, recognizing that they constituted a select group. Most differences among groups, however, favored partially-integrated students. This group appeared to have the best social adjustment, even compared to the hearing students in the study. On the one hand, these findings support the view of those concerned with the marginalization of deaf students who are fully mainstreamed (e.g. Glickman, 1986, but also questions those who would advocate segregated placements (e.g. Stewart, 1984; Brill, 1975). The results of this study support a middle position, that of partial-integration. Given the biases inherent in the sample, we would have to add "...for appropriate students." This view is consistent with a bilingual/bicultural view of deafness. It suggests that deaf students do not have to choose between a hearing and a deaf world, but are able to maintain relationships with each, and benefit from doing so.

REFERENCES

Antia, S.D. (1982). Social integration of partially mainstreamed hearing-impaired children. *American Annals of the Deaf, 127*(1), 18-25.

Arnold, D., & Tremblay, A. (1979). Interaction of deaf and hearing preschool children. *Journal of Communication Disorders, 12*, 245-251.

Brackett, D., & Henniges, M. (1976). Communicative interaction of preschool hearing impaired children in an integrated setting. *Volta Review, 78*, 276-285.

Brill, R. (1975). Mainstreaming: Format or quality? *American Annals of the Deaf, 120*, 377-381.

Carver, R. J. & Doe, T. M. (1990). Rehabilitation or oppression: Options for the humanization of the deaf. Canadian Journal of the Deaf, 3, 87-101.

Charlson, E., Strong, M., & Gold, R. (1992). How successful deaf teenagers experience and cope with isolation. *American Annals of the Deaf, 137*(3), 261-270.

Davis, J. (1986). Academic placement in perspective. In D. Luterman (Ed.), *Deafness in Perspective*. San Diego, CA: College Hill Press.

Farrigua, D., & Austin, G. (1980). A study of socio-emotional adjustment patterns of hearing-impaired students in different educational settings. *American Annals of the Deaf, 125*(5), 535-541.

Foster, S. (1988). Life in the mainstream: Reflections of deaf college freshmen on their experiences in the mainstreamed high school. *Journal of Rehabilitation of the Deaf, 22*, 37-56.

Glickman, N. (1986). Cultural identity, deafness and mental health. *Journal of Rehabilitation of the Deaf, 20*, 1-10.

Greenberg, M. T. (1980). Mode use in deaf children: the effects of communication method and communicative competence. Applied Psycholinguistics, 65, 65 - 79.

Greenberg, M. T., & Kusche, C. A. (1989). Cognitive, personal and social development of deaf children and adolescents. In M. Wang, M. Reynolds, & H. Walberg (Eds.), *Handbook of Special Education: Research and Practise*. New York: Pergamon Press.

Kennedy, P., Northcott, W., McCauley, R., & Williams, S.N. (1976). Longitudinal sociometric and cross sectional data on mainstreamed hearing impaired children: Implications for school planning. *Volta Review, 78,* 71-81.

Ladd, G.W., Munson, J.L., & Miller, J.K. (1984). Social integration of deaf adolescents in secondary level mainstreaming programs. *Exceptional Children, 50,* 420-429.

Lane, H. (1988). Is there a "psychology of the deaf?" Exceptional Children, 55, 7-20.

Leigh, I., & Stinson, M.S. (1991). Social environments, self-perceptions, and identity. *Volta Review, 93*(5), 7-22.

Lederberg, A. R., Chapin, S. L., Rosenblatt, V. & Vandell, D. L. (1986). Ethnic, gender and age preferences among deaf and hearing preschool peers. Child Development, 57, 375-386.

Lederberg, A. R., Rosenblatt, V., Vandell, D. L. & Chapin, S. L. (1987). Temporary and long-term friendships in hearing and deaf preschoolers. Merrill-Palmer Quarterly, 33, 515-533.

Moores, D. (1987). *Educating the Deaf* (3rd Edition). Boston, MA: Houghton Mifflin.

Musselman, C., Lindsay, P.H., & Wilson, A.K. (1988). An evaluation of recent trends in preschool programming for deaf children. *Journal of Speech and Hearing Disorders, 53,* 71-88.

Musselman, C., MacKay-Soroka, S., Trehub, S., & Simon-Eagle, R. (in press). Communcative Competence and Psychosocial Develoment in Deaf Children and Adolescents. In J. Beitchman, R. Tannock, & M. Konstantareas (Eds.), Language Learning and Behavior Disorders: Emerging Perspectives, London: Cambridge.

Padden, C. & Humphreys, T. (1988). Deaf in America: Voices from a Culture. Boston: Harvard.

Reich, C., Hambleton, D., & Houldin, R.K. (1977). The integration of hearing-impaired children in regular classroom. *American Annals of the Deaf, 122*(6), 534-543.

Schlesinger, H.S., & Meadow, K.P. (1972). *Sound and Sign: Childhood Deafness and Mental Health.* Berkeley, CA: University of California Press.

Shaffer-Meyer, D.A. (1990). *The self-concept of mainstreamed hearing-impaired students.* Unpublished doctoral dissertation, University of Northern Colorado.

Stewart, D. (1984). Mainstreaming deaf children: A different perspective. *ACHEHI/ACEDA, 10*(2), 91-104.

Stinson, M.S., & Chase, K.W. (1990). *Self-perceptions of social relationships in hearing-impaired adolescents in the United Kingdom.* Paper presented at the Convention of the American Educational Research Association, Boston, MA.

Stinson, M.S., Chase, K.W., & Kulwin, T.N. (1990). *Self-perceptions of social relationships in hearing-impaired adolescents.* Paper presented at the Convention of the American Educational Research Association, Boston, MA.

Weisel, A., & Bar-Lev, H. (1992). Role taking ability, nonverbal sensitivity, language and social adjustment of deaf adolescents. *Educational Psychology, 12*(1), 3-13.

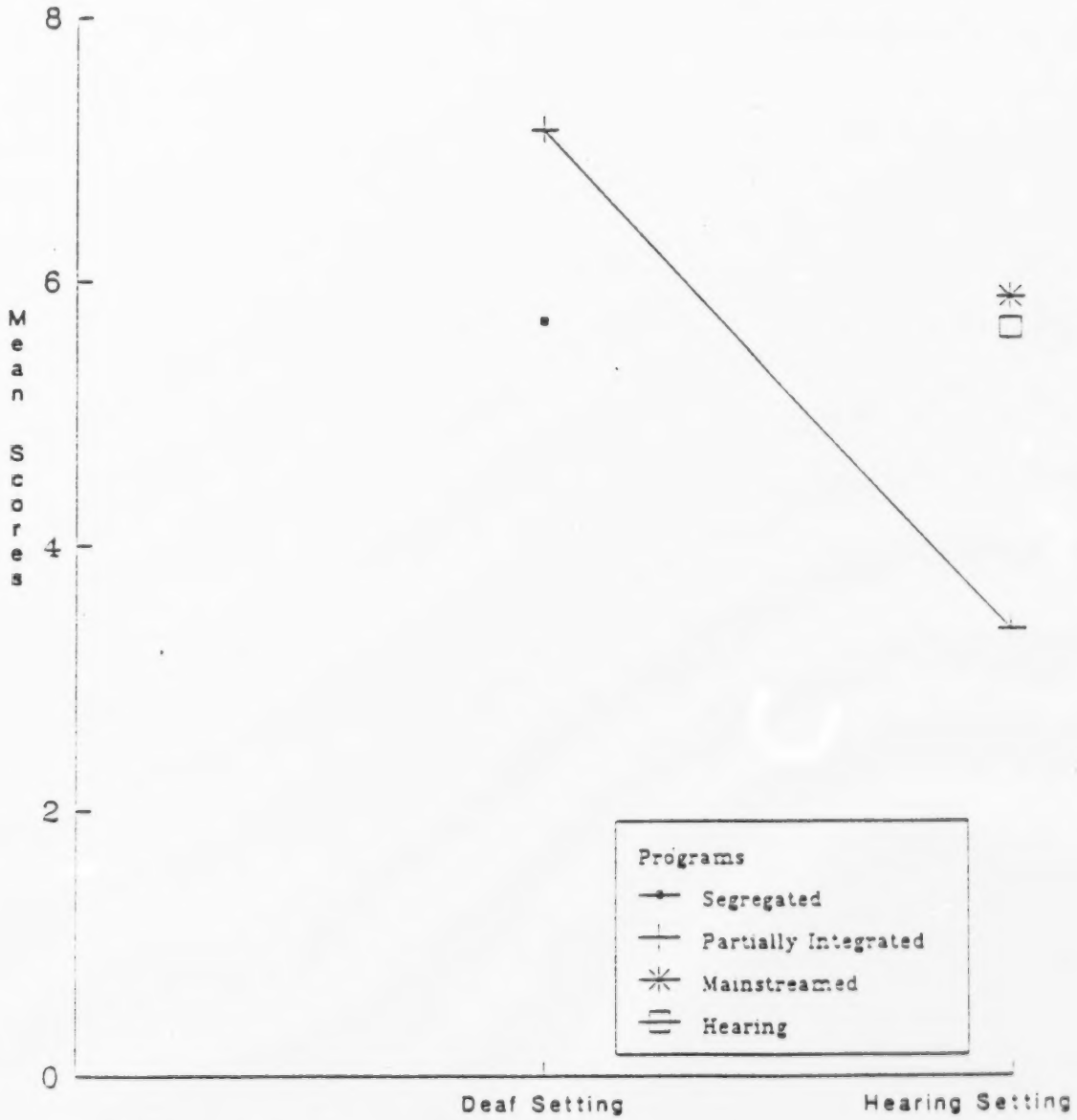

Figure 1. Mean Scores on Inclass Participation Scale by Program and Setting.

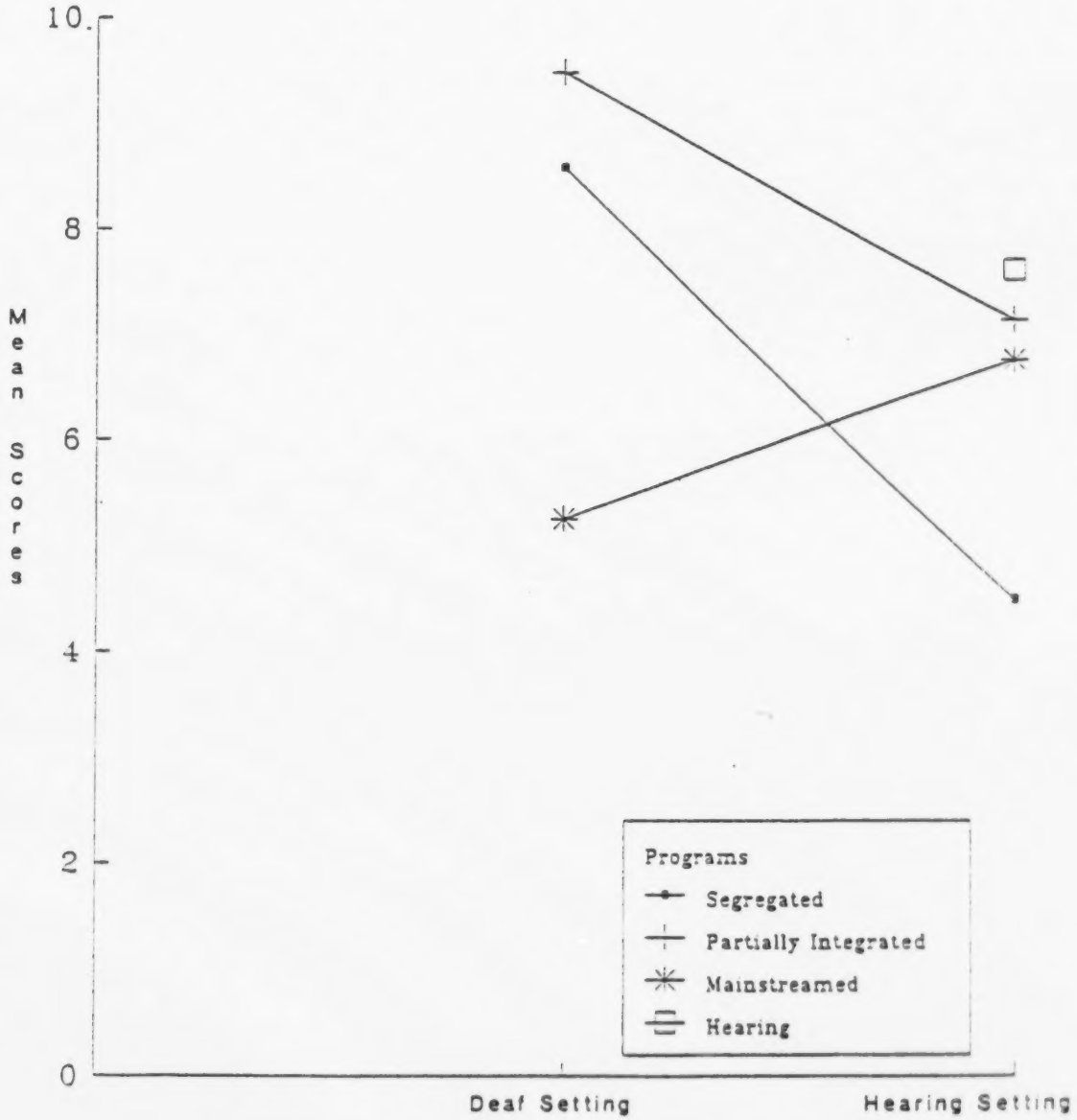

Figure 2. Mean Scores on Social Activity Scale by Program and Setting.

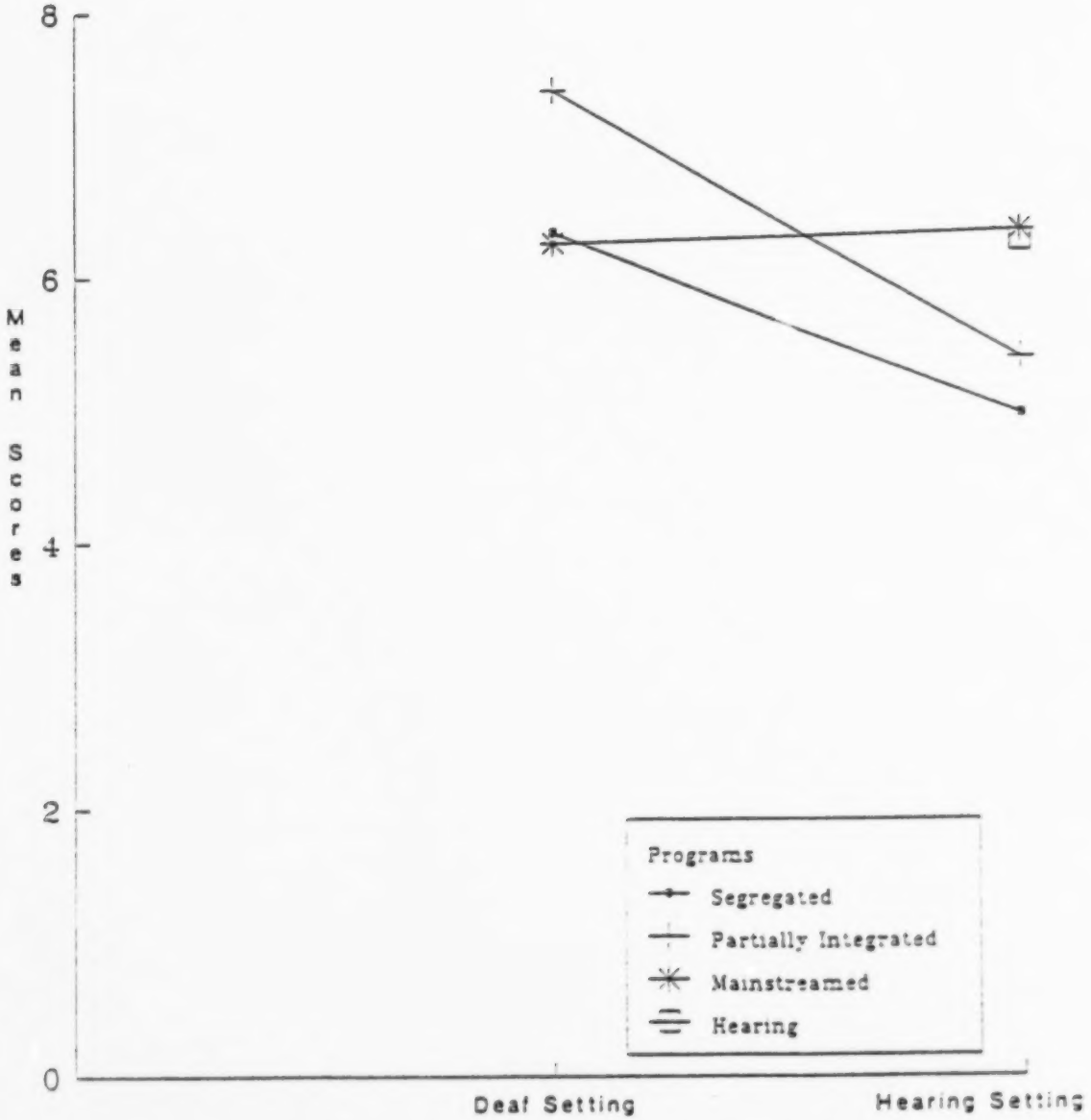

Figure 3. Mean Scores on Emotional Security by Program and Setting.

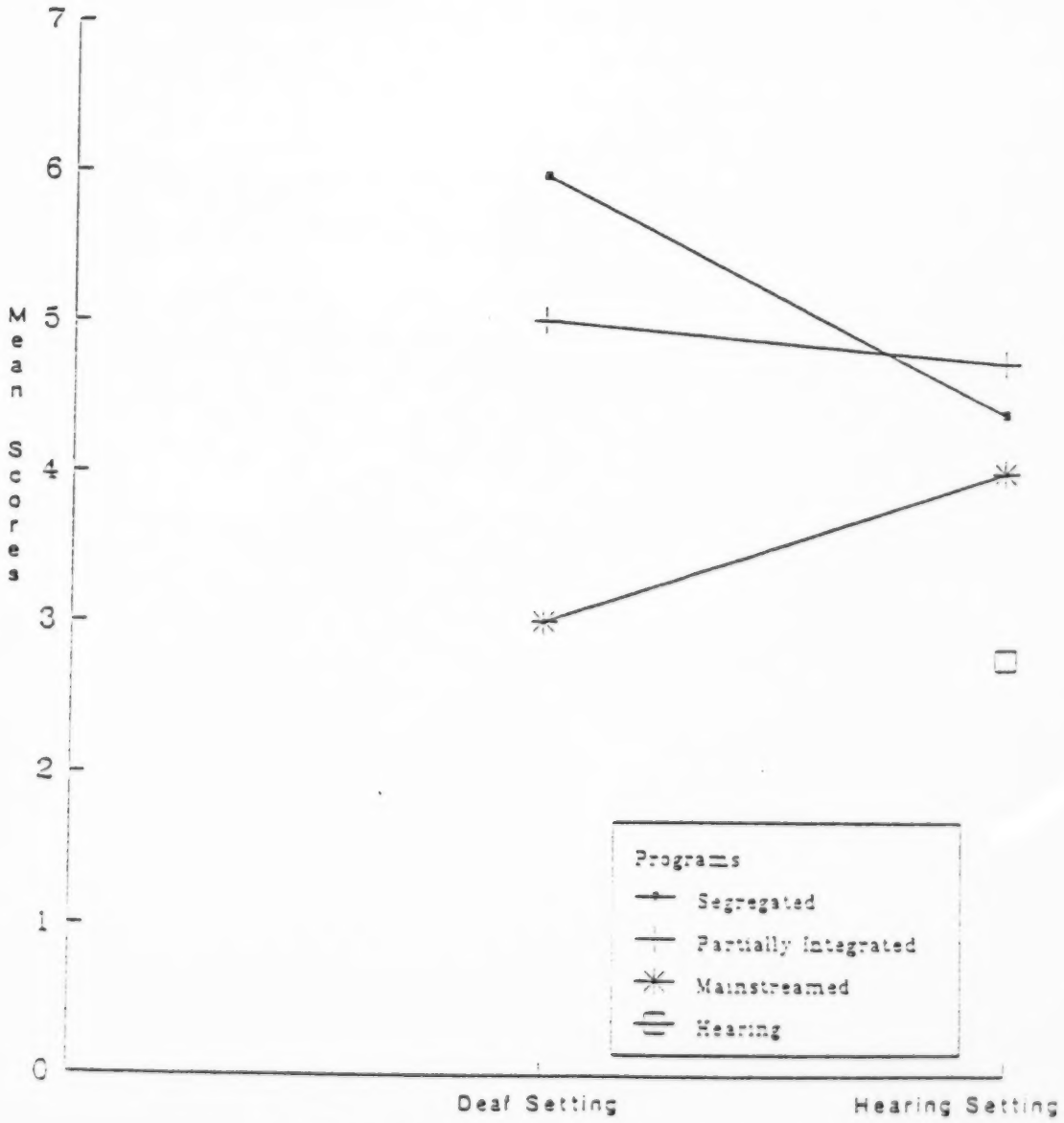

Figure 4. Mean Scores on Closer Relationships by Program and Setting.

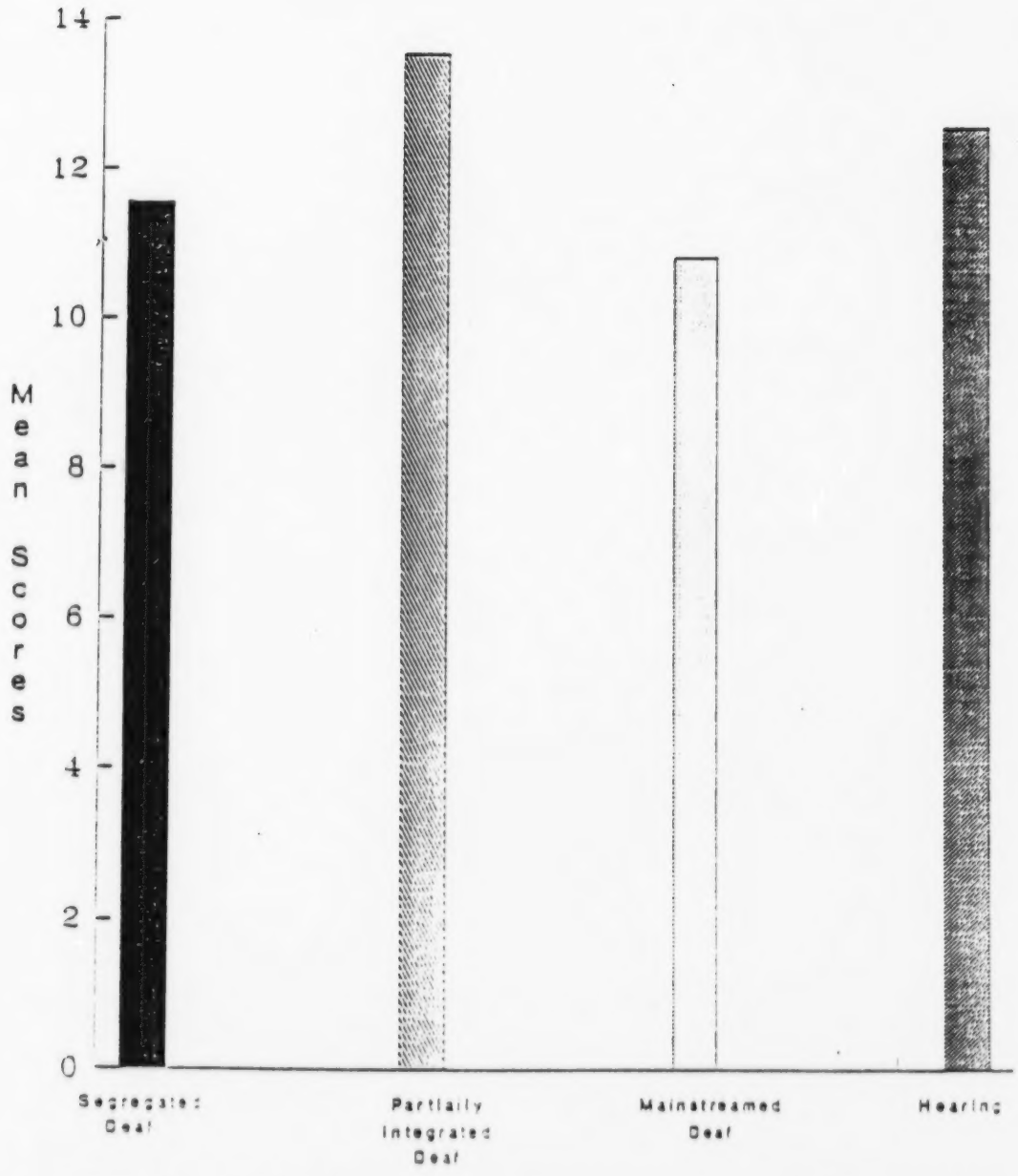

Figure 5. Perceived Social Competence Scores by Program